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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/402,633	05/25/2000	CHRISTIAN R. FREI	PM264183	6229

7590 08/13/2003

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EXAMINER
DINH, KHANH Q

ART UNIT	PAPER NUMBER
2155	12

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/402,633	FREI ET AL.	
	Examiner	Art Unit	
	Khanh Dinh	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 May 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15 and 17-58* is/are rejected.

7)☒ Claim(s) *16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .	6) ☐ Other: .

DETAILED ACTION

1. This is response to the Preliminary Amendment filed on 6/3/2003. Claims 1-58 are presented for examination.

Claim Objections

2. Claim 55 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claims 55 and 26. See MPEP § 608.01(n).

Specification

3. The abstract of the disclosure is objected to because it contains an extra line "*figure 4*" at the bottom of the abstract page. *The line should be removed.*

Correction is required. See MPEP § 608.01(b).

4. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Content of Specification

(a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data shet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.

(b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.

(c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.

(d) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.

(e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:

(1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."

(2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."

(f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

(g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.

(h) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known

in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

(i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet (37 CFR 1.52(b)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).

(j) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).

(k) Sequence Listing, See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Claim Objections

5. Claims 1, 14, 26, 48, 52 and 53 are objected to because of the following informalities:

Appropriate correction is required.

In claims **1** (page 26, line 4, word 9), **26** (page 29, line 3, word 1), **48** (page 33, line 3, word 9) and **53** (page 34, line 2 word 1): the word "**characterised**" should be changed to "***characterized***".

In claims **52** (page 34, line 1 (word 3), line 2 (words 3 and 5), line 9 (word 5)): the word "**summarized**" should be changed to "***summarized***".

In claim **5** (line 11 word 1), "**organising**" should be changed to "***organizing***".

In claim 14 (line 2, word 3), "**analysing**" should be changed to "**analyzing**".

In claim 14 (line 2, word 5), "**behaviour**" should be changed to "**behavior**".

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 1-15, 16-20, 26-42 and 47-58 are rejected under 35 U.S.C. 102(e) as being anticipated by Lovelace et al., US pat. No.5,901,136.

As to claim 1, Lovelace discloses a method of management in a circuit-switched communication network, the method being performed on, or with the aid of, at least one programmable device (22 fig.1) connected to said network, characterized by the step of computing and storing in an electronic memory a representation o1 the network based on B-blocking islands (network interface islands 11, 12, 15 and 17 of fig.1), each B blocking island consisting of a maximal set of nodes (using distributed services nodes 18 fig.1) linked in a such a way that at least one route with at least an amount B of concave resources exists between any pair of nodes in the set at the time t (using DSO data and timing 24 fig.1) (see abstract, fig.1, col.3 line 44 to col.4 line 59 and col.5 lines 10-65 and col.6 lines 11-43).

As to claim 2, Lovelace discloses organizing said B-blocking islands (11, 12, 15 and 17 of fig.1) in a hierarchy, wherein the hierarchical position of each Bi- blocking island depends on the choice of the value B used for defining said blocking island (see col.5 lines 10-65).

As to claim 3, Lovelace discloses values B used for is defining the blocking island hierarchy are predefined according to common resources requirements (using the internal configuration of the network interface island components, see col.6 lines 11-56).

As to claim 4, Lovelace discloses changing dynamically said values used for defining the blocking island hierarchy (see col.6 lines 11-56 and col.9 line 12 to col.10 line 57).

As to claim 5, Lovelace discloses dynamically merging at least one hierarchical level two B-blocking islands when deallocation of an established circuit in said network (1) has freed enough resources on a link (l) between said two B-blocking islands (N;) such that at least an amount B of resources is available on said link (see figs.2 and 8B, col.6 line 43 to col.7 line 56 and col.13 line 12 to col.14 line 48).

As to claim 6, Lovelace discloses dynamically splitting at least one hierarchical level a B-blocking island (N) when establishment of a new circuit using at least one link between two nodes inside said B-blocking island uses too many resources to allow a route with at least an amount B of resources between any pair of nodes inside said B-blocking island (see figs.2 and 8B, col.6 line 43 to col.7 line 56 and col.13 line 12 to col.14 line 48).

As to claim 7, Lovelace discloses updating said B-blocking island hierarchy in the case of rerouting of demands, link failure or link removal, alteration of the properties of a link, adding of a link, node failure, node removal or node addition (interfaces and other components may be omitted or relocated, see fig.8A-8C, col.6 line 43 to col.7 line 56, col.11 lines 8-65 and col.14 line 6 to col.15 line 44).

As to claim 8, Lovelace discloses finding a path between at least two nodes (A-G) in a circuit-switched communication network (1) with at least an amount b of resources available, the search of said path (connection between network interface islands) being confined to a B-blocking

island comprising at least two said nodes, and B being bigger than b (see fig.6, col.5 line 10 to col.6 line 43 and col.11 line 19 to col.12 line 12).

As to claim 9, Lovelace discloses selecting the most suitable path by analyzing the impact each path has on the structure of blocking islands hierarchy (see fig.6, col.5 line 10 to col.6 line 43 and col.11 line 19 to col.12 line 12).

As to claim 10, Lovelace discloses selecting the most suitable path by comparing at which level of the B-blocking island hierarchy each route appears (see fig.6, col.5 line 10 to col.6 line 43 and col.11 line 19 to col.12 line 12).

As to claim 11, Lovelace discloses the search space for a demand of the routing algorithm is reduced to the sub-network summarized by the B-blocking island with the greatest predefined B that contains the endpoints of said demand (see fig.6, col.5 line 10 to col.6 line 43 and col.11 line 19 to col.12 line 12).

As to claim 12, Lovelace discloses rerouting connections that use more critical links at level B, of the hierarchy than necessary zig-zag connections (see fig.6, col.5 line 10 to col.6 line 43 and col.11 line 19 to col.12 line 12).

As to claim 13, Lovelace discloses determining the price of a communication, said price being dependent at least partially on the hierarchical level of the links used by the circuit established

for the communication in said hierarchy of B-blocking islands (see fig.6, col.5 line 10 to col.6 line 43 and col.11 line 19 to col.12 line 12).

As to claim 14, Lovelace discloses analyzing the behavior of an existing circuit-switched communication network or planning the construction of a new circuit-switched communication network or the modification of an existing circuit-switched communication s network (see fig.6, col.5 line 10 to col.6 line 43 and col.11 line 19 to col.12 line 12).

As to claim 15, Lovelace discloses a hierarchy of autonomous intelligent agents, each agent being responsible for a set of nodes in said circuit-switched communication network, higher level agents arbitrating conflicts between peer agents, each agent being responsible for a dynamically defined set of nodes consisting of nodes linked in a such a way that at least a route with at least an amount B of concave resources exist between any pair of nodes in the set- at the time t, and the level of the agents in said hierarchy being dependent on the choice of the value B used for defining said set of nodes (see fig.6, col.5 line 10 to col.6 line 43 and col.11 line 19 to col.12 line 12).

As to claim 17, Lovelace discloses determining the price of a communication, said price being dependent at least partially on the hierarchical level of the links used by the circuit established for the communication in said hierarchy of blocking islands (see fgis.2, 6, col.5 line 10 to col.6 line 43 and col.11 line 19 to col.12 line 12).

As to claims 18-20, Lovelace discloses determining the nodes belonging to the same B-blocking s island is the bandwidth performed on a central hardware, software management platform and performed by distributed communication and/or terminal nodes in the network (see fig.6, col.5 line 10 to col.6 line 43 and col.11 line 19 to col.12 line 12).

As to claim 26, Lovelace discloses a device which can be used as a terminal node or as a communication node in a circuit-switched communication network, characterized by means for computing a representation of the network based on B-blocking islands network interface islands 11, 12, 15 and 17 of fig.1), each B-blocking island consisting of a maximal set of concave nodes linked in a such a way that at least one route with at least an amount B of resources exists between any pair of nodes in the set at the time t, and storing means for storing said representation (using DSO data and timing 24 fig.1) (see abstract, fig.1, col.3 line 44 to col.4 line 59 and col.5 lines 10-65 and col.6 lines 11-43).

Claims 27-38 are rejected for the same reasons ser froth in claims 2-11, 13 and 14 respectively.

As to claim 39, Lovelace discloses means to connect it to said circuit-switched communication network (see fig.1 and col.3 line 44 to col.4 line 59).

Claims 40-42 and 47 are rejected for the same reasons ser froth in claims 19, 20, 15 and 18 respectively.

Claims 48-49 are rejected for the same reasons ser froth in claims 1 and 2 respectively.

As to claims 50, 51 and 54, Lovelace discloses graphically displaying on a display connected to said programmable device a summarized representation of said network critical links between said blocking islands (see figs.8A-8D, col.9 lines 12-64 and col.13 line 7 to col.14 line 56).

Claim 52 is rejected for the same reasons ser forth in claim 26. As to the added limitations, Lovelace discloses processing means, storing means and display means (see fig.1, 8A-8D, col.9 lines 12-64 and col.13 line 7 to col.14 line 56).

Claim 55, 56 and 58 are rejected for the same reasons ser forth in claim 26.

Claim 57 is rejected for the same reasons ser forth in claim 48.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 21-25 and 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lovelace et US pat. No.5,901,135 as in item 7 above and in view of Nagami et al US pat. No.5,835,710.

Lovelace's teachings still applied as in item 7 above. Lovelace dos not disclose using an ATM network, ATM switch, a SDH network, RSVP and TCP/IP network, and a TDM network. However, such protocols are generally well known in the communication networks as disclosed by Nagami (see figs.1, 4, 44, col.7 line 55 to col.8 line 36 and col.13 line 8 to col.15 line 51). It would have been obvious to one of the ordinary skill in the art at the time the invention was made to utilize such protocols in the computer system of Lovelace provide network interconnection because it would have provided more utilizations of the computer network and transmitted data or frame relay traffic in real time.

Allowable Subject Matter

11. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: None of the cited prior art discloses or teaches that routing demands between at least two nodes in a circuit-switched communication network, and comprising the following steps: undertaken when a new demand arises issued by a network node x which needs to communicate with at least one other node y, an

amount B of resources being requested for that communication first the node x asks the agent responsible for the node x with the lowest level in the hierarchy of agents to establish a circuit for said new demand, said agent passes on this demand to the agent at the next level in the hierarchy, until the agent at the level B is reached, which then finds a route between x and y and establishes the circuit.

Other prior art cited

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Crossland et al, US pat. No.5,576,873.

b. Lovelace et al, US pat. No.6,285,687.

c. Deschaine et al, US pat. No.6,198,720.

d. Olnowich et al., US pat. No.6,263,374.

Conclusion

13. Claims 1-15 and 17-58 are rejected.

14. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Dinh whose telephone number is (703) 308-8528. The examiner can normally be reached on Monday through Friday from 8:00 A.m. to 5:00 P.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam Hosain, can be reached on (703) 308-6662. The fax phone numbers for this group are:

After Final: (703) 746-7238

Official: (703) 746-7239

Non-Official/ Draft: (703) 746-7240

A shortened statutory period for reply is set to expire THREE months from the mailing date of this communication. Failure to response within the period for response will cause the application to become abandoned (35 U. S. C . Sect. 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(A).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305 -9600.

Khanh Dinh
Patent Examiner
Art Unit 215 5
8/6/2003

HOSAIN T. ALAM
PRIMARY EXAMINER